

# Peeling, Structural Case, and Czech Retroactive Infinitives\*

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## Abstract

In Czech, several verbs can embed infinitives in which the object, not the subject, appears to function as the controlled argument. Following Jespersen (1940) we call these infinitives retroactive infinitives and analyze them as hidden passives, in which an object base-generated in the embedded structure enters into an A-relation (phi-agreement, Case-assignment, A-movement) with the matrix structure. We show that a proper analysis of Czech retroactive infinitives contributes to our understanding of structural Case assignment and structural deficiency. In particular, we argue that structural Dative is licensed higher than structural Accusative and that peeling is the default mechanism of structural impoverishment.

## 1 Introduction

There is an unexpected ambiguity in Czech infinitives embedded under verbs *potřebovat* ‘need’, *chtít* ‘want’, and *zasloužit si* ‘deserve’, as illustrated in (1)–(3). While examples with the reading in (a) are standard control structures, in (b) it is the embedded *object* that is referentially dependent on the matrix subject. The embedded, referentially dependent object is unpronounced but would normally be realized as an argument in accusative, (1), or in dative, (2) and (3).<sup>1</sup>

- (1) Ten muž            potřebuje milovat.  
    that man.nom needs            love.inf  
    a. ‘That man needs to love (somebody).’  
    b. ‘That man needs love (from somebody).’

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1 Abbreviations used in glosses: acc – accusative, dat – dative, fem – feminine, gen – genitive, inf – infinitive, instr – instrumental, neut – neuter, nom – nominative, pass – passive, refl – reflexive pronoun, sg – singular.

- (2) Marie chce ukázat cestu.  
 Marie.nom wants show.inf way.acc  
 a. ‘Marie wants to show the way (to somebody).’  
 b. ‘Marie wants someone to show her the way.’
- (3) Marie si zaslouží pomoci.  
 Marie.nom refl deserves help.inf  
 a. ?‘Marie deserves to help (somebody).’  
 b. ‘Marie deserves help (from somebody).’

The infinitives in which an unpronounced internal argument is referentially dependent on an argument in the matrix clause were coined retroactive infinitives in Jespersen (1940), who proposed to analyze them as hidden passives. We are going to follow his terminology, referring to the (b) interpretations of (1)–(3) as *Czech retroactive infinitives*. Furthermore, we will argue that his analysis, abandoned for English, is correct for Czech.

The novelty of the present paper lies mainly in the empirical domain. While retroactive infinitives and gerunds have been analyzed in English, as far as we know this is the first work within the framework of Principles and Parameters that studies Czech retroactive infinitives.<sup>2</sup>

However, it also provides novel arguments for several theoretical issues. It leads to the conclusion that Dative in Czech is, at least in some instances, a structural Case and that structural Dative is licensed higher than structural Accusative. Furthermore, it argues that “truncation” or “peeling” of functional sequence can be utilized as an argument promoting mechanism, which has been independently argued for by Wurmbrand (2001). Finally, it shows that Czech has at least two types of dative arguments, structural and lexical ones.

The paper is organized as follows. In the next section, we present arguments pointing to the conclusion that Czech retroactive infinitives are passive in nature. We discuss our analysis in detail in Section 3. In Section 4, we turn to the predictions that our analysis makes. Section 5 concludes the paper.

## 2 Czech retroactive infinitives as passives

Jespersen (1940) mainly used the label retroactive infinitives for object purpose clauses and constructions that are currently known as *tough*-constructions. Nowadays, standard analyses do not treat these constructions as hidden passives,

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2 Czech retroactive infinitives were discussed in traditional linguistics. Jarmila Panevová pointed out to us that probably the first linguist discussing these constructions was Bernd Koenitz. See, e.g., Koenitz (1972).

rather, they are analyzed as infinitival clauses in which the infinitival object and the matrix subject are related in some other way than through passivization. The relation can be direct or indirect. Consider example (4). In the approaches that assume a direct link (Rosenbaum 1967; Bayer 1990; Sportiche 2006) the matrix subject *Mary* originates as the object of *please* and raises into the matrix clause, leaving a trace or a copy behind, as shown in (4a). In the approaches that assume an indirect link (Ross 1967; Akmajian 1972; Chomsky 1977; Hicks 2003) the relation is mediated by the coindexation of the matrix subject with an embedded empty category, possibly by operator movement in the infinitival clause, see (4b). In either case, the subject position in the infinitival clause is filled in by the arbitrarily interpreted PRO and the infinitive is active, i.e., it does not lack any Case-assigning properties.

- (4) Mary is tough to please.  
 a. [Mary<sub>i</sub> [VP is tough [CP PRO<sub>arb</sub> [VP to please t<sub>i</sub>]]]]  
 b. [Mary<sub>i</sub> [VP is tough [CP Op<sub>i</sub> PRO<sub>arb</sub> [VP to please t<sub>i</sub>]]]]

Is it possible to carry over this analysis to Czech retroactive infinitives? If so, we could analyze (5a) as (5b), assuming the direct link approach for the sake of argument.

- (5) a. Marie        potřebuje    pomoct.  
       Marie.nom    needs            help.inf  
       ‘Marie needs help (from somebody).’  
 b. [Marie<sub>i</sub> [VP potřebuje [CP PRO<sub>arb</sub> pomoct t<sub>i</sub> ]]]

Crucially, more data reveal that an analysis along the lines of *tough*-constructions is on the wrong track and the original analysis proposed by Jespersen (1940) for English seems correct.

First, just like passives, Czech retroactive infinitives can be modified by a *by*-phrase. An RI-modifying *by*-phrase surfaces either as Instrumental-marked, (6a), or as a PP headed by the preposition *od* ‘from’, (6b). This distinction appears to correlate with the lexicalization of *by*-phrases in Czech canonical and non-canonical passives, respectively, as shown by (7).<sup>3</sup> Crucially, retroactive infinitives differ in this respect from other embedded infinitivals, such as control

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3 For a descriptive study of Czech non-canonical passives (also called *get*-passives), see Daneš (1968). We know of no study arguing that Czech non-canonical passives actually undergo a passive transformation (such as a promotion of an internal argument to the subject position), but there are many such analyses for Germanic languages, see, e.g., Reis (1985), Fanselow (1987), Broekhuis and Cornips (1994), and McFadden (2004).

constituents, which display no passive behavior and accordingly cannot be modified by a *by*-phrase, (8).

- (6) a. Ta kniha potřebuje přeložit zkušeným překladatelem.  
 that book.nom needs translate.inf experienced translator.instr  
 ‘That book needs translating by an experienced translator.’
- b. Marie si zaslouží pomoct od někoho zkušeného.  
 Marie.nom refl deserves help.inf from somebody.gen experienced  
 ‘Marie deserves help (from somebody experienced).’
- (7) a. Ten meteorit byl objeven norskými výzkumníky.  
 that meteorite.nom was discover.pass Norwegian researchers.instr  
 ‘The meteorite was discovered by Norwegian researchers.’
- b. Karel dostal vyhubováno od učitele matematiky.  
 Karel.nom got scold.pass from teacher.gen mathematics.gen  
 ‘Karel got a good dressing down from the math teacher.’
- (8) a. Karel plánoval přeložit tu knihu (\*zkušeným překladatelem).  
 Karel planned translate.inf that book.acc experienced translator.instr  
 ‘Karel planned to translate the book.’ (*by*-phrase impossible)
- b. Plánovali jsme pomoct Marii (\*od někoho zkušeného).  
 Planned past.aux.1pl help.inf Marie.dat from somebody.gen experienced  
 ‘We planned to help Mary.’ (*by*-phrase impossible)

Second, the empty category cannot be separated from the matrix subject by an extra (infinitival) clause, (9). This would be unexpected if the relation between the nominative constituent and the gap it binds were mediated by an operator-variable relationship of the A-bar type, as in *tough*-constructions, where multiple levels of embedding, reflecting successive cyclic operator movement, are clearly allowed, (10).

- (9) Ta literatura potřebuje (\*zkusit) řádně prostudovat.  
 that literature.nom needs try.inf properly study.inf  
 Intended: ‘One needs (to try) to study the literature properly.’
- (10) Moby Dick will be tough to get John to try to read. (from Jones 1991)

Finally, verbs that cannot function as passives cannot function as retroactive infinitives either (though this is only a one-way implication). This is true for example for possessives, which are known to lack the passive form in many languages, including Czech, and are ungrammatical as retroactive infinitives, see

(11).<sup>4</sup> Other examples are inherently reflexive verbs like *zasmát se* ‘to laugh’ and *vyhnout se* ‘to avoid’, which can form neither passives nor retroactive infinitives, see (12).

- (11) a. \*Ten obraz si zaslouží mít.  
 that painting.nom refl deserves have.inf  
 Lit.: ‘The painting deserves having.’  
 Intended: ‘It is desirable to have the painting.’
- b. \*Ten obraz je mán (Karlem).  
 that painting.nom is have.pass Karel.instr  
 Lit.: ‘The painting is (being) had (by Karel).’  
 Intended: ‘Karel has that painting.’
- (12) a. \*Ta dálnice (se) potřebuje vyhnout.  
 that highway.nom refl needs avoid.inf  
 Intended: ‘The highway needs to be avoided.’
- b. \*Té dálnici (se) bylo úspěšně vyhnuto.  
 that highway.dat refl was.neut successfully avoid.pass  
 Intended: ‘The highway was successfully avoided.’

We conclude that Czech retroactive infinitives should be to some extent assimilated to passives. We will provide such an analysis in the next section. Before going there, we want to point out that by now it should be clear that our unexpected infinitival construction is rather different from *tough*-constructions. However, it strongly resembles English retroactive gerunds and retroactive nominals such as *The overcoat wants (a thorough) cleaning* (see Hantson 1984; Clark 1990; Safir 1991), which can also be modified by *by*-phrases, require local relations between the subject and the gap and cannot embed non-passivizable predicates. Furthermore, the two constructions, Czech retroactive infinitives and English retroactive nominals/gerunds, are selected by the same class of predicates. The retroactive gerunds/nominals are selected by verbs like *want*, *need*, *deserve*, or *merit* and Czech retroactive infinitives are selected by the three verbs mentioned above: ‘need’, ‘want’, and ‘deserve’/‘merit’. These similarities might justify a common analysis of both constructions and in fact, our treatment of Czech retroactive infinitives as hidden passives is partly motivated by Clark’s (1990) and Safir’s (1991) analysis of English retroactive gerunds.<sup>5</sup> However, the

4 The passive participle \**mán* ‘had’ is an unattested hypothetical passive form. Yet, it is apparently latently present in the grammatical system of Czech, as it can feed the derivation of a deverbal nominal, cf. *mání* ‘having’.

5 A detailed comparison between Czech retroactive infinitives and English retroactive gerunds/nominals is left for future research.

Czech data add an extra twist because of the infinitival mood and rich morphological case in Czech, as the next two sections discuss in detail.

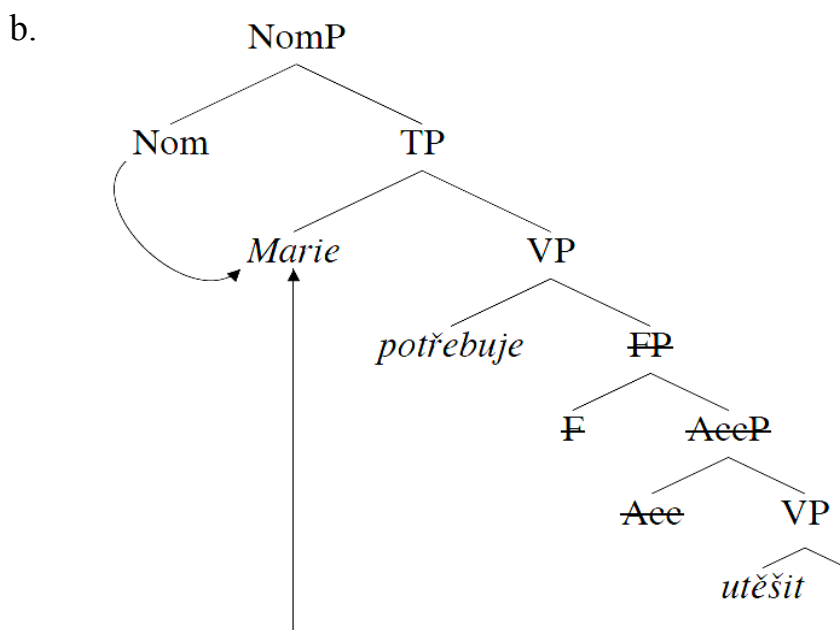
### 3 Analysis

Our main claim is that Czech retroactive infinitives are passives, i.e. they lack the external argument (which, however, can be realized as an adjunct, as is common in passives) and they also lack exactly one structural Case-assigning projection. The internal argument whose canonical Case-assigning projection is absent in the infinitival clause undergoes agreement with the Case assigner of the matrix, bearing Nominative as a result. In order to get rid of a structural Case-assigning head (Acc below), all the functional structure of the retroactive infinitive that c-commands/controls that head (marked as FP and AccP in (13b)) must also be removed, or, as we say, “peeled”. The remaining structure is a bare, restructured, infinitive, which lacks a phrase assigning structural Case to an object and all higher functional projections (up to the level of the selecting predicate – *potřebuje* ‘need’ in (13)). Thus, retroactive infinitives are similar to restructuring infinitives in German (Wurmbrand 2001) and Czech (Medová 2000; Dotlačil 2004). Throughout this paper, we mark movement by a straight line and the Case-licensing relation (Agree) by a curved line.<sup>6</sup>

- (13) a. Marie        potřebuje utěšit.  
          Marie.nom    needs            calm.inf  
          ‘Marie needs calming (from somebody).’

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6 For a comment on the non-standard Nom(P)/Acc(P) notation see footnote 7.



In our analysis, the Nominative constituent (*Marie* in the example (13)) is base-generated within the retroactive infinitive and raises to the matrix clause. This can happen if verbs that select retroactive infinitives are in fact raising verbs. This assumption is supported by the fact that the matrix subject bears no thematic relation with the matrix verb. In particular, matrix subjects in retroactive infinitives can be part of idioms, (14a), in which respect they pattern with ordinary passivization, (14b), and differ from subjects of control verbs, (14c).

- (14) a. *Dvě mouchy potřebují zabít jednou ranou.*  
 two flies.nom need kill.inf one blow.instr  
 ‘It is desirable to kill two birds with one stone.’ (idiomatic reading present)
- b. *Dvě mouchy byly zabity jednou ranou.*  
 two flies.nom were kill.pass one blow.instr  
 ‘Two birds were killed with one stone.’ (idiomatic reading present)
- c. #*Dvě mouchy potřebují být zabity jednou ranou.*  
 two flies.nom need be.inf kill.pass one blow.instr  
 ‘Two birds need to be killed with one stone.’ (idiomatic reading absent)

Notice that our approach entails that verbs that are capable of selecting retroactive infinitives are ambiguous (or rather syncretic) between two versions: a control version, e.g. in (14c), which selects for active infinitives and a raising version, e.g. in (14a), which selects for peeled passive infinitives.

The rest of this section spells out this analysis in more detail. There are two assumptions that we have to make in order to derive the properties of Czech

retroactive infinitives. One of them concerns Case licensing and the Case hierarchy (section 3.1) and the other one concerns ways in which a clause can be structurally deficient (section 3.2).

### 3.1 Case

Since both Dative and Accusative in retroactive infinitives can in principle be promoted to the matrix subject position and alternate with Nominative, we argue that both Cases must be structural in Czech. Thus, Czech has (at least) three structural Cases: Nominative, Accusative, and Dative. That Dative can be a structural Case has been argued mainly for German (Fanselow 1987; Wegener 1991; Abraham 1995; McFadden 2004) and Dutch (Broekhuis and Cornips 1994; 2010), based on the evidence from *get*-passives. Retroactive infinitives bring a novel support for this assumption.

As is standard in the framework of Principles and Parameters, structural Case on a DP gets licensed by establishing a relation (Agree+Evaluate) with a functional head in the extended verbal projection. We call the heads licensing structural Nominative, Accusative and Dative Nom, Acc, and Dat, respectively.<sup>7</sup> Given our data, we will argue that the heads have a fixed position in the functional sequence. They are strictly ordered in the following fashion:

- (15) Nom < Dat < Acc  
(where < translates to asymmetric c-command)

Recently, Dyakonova (2009), Bailyn (2010), and Dvořák (2010) analyzed the syntax of arguments in Slavic ditransitives, which is a recurring theme in Slavic formal linguistics (see the cited papers for previous work in this domain). *Prima facie*, it might seem that our hierarchy is incompatible at least with the approach that Bailyn (2010) labels ‘Higher Accusative’ analyses, according to which the Accusative argument asymmetrically c-commands the Dative argument. But our position is more nuanced and closest to Dvořák (2010): while we assume one hierarchy for structural Cases, we are going to argue that there are also instances of lexical datives, and we remain agnostic about their positions with respect to Acc.

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7 We use these labels mainly for expository reasons. The notation can easily be translated to one in which structural Case is represented as a feature on a functional head (such as T, *v*, Agr, or the like) rather than a head itself, provided that the operations/relations under discussion involve the corresponding functional heads. Thus, the reader can read “the head Nom” as “the functional head X bearing [nom]”, as long as s/he does not hold us responsible for whichever entailments might arise from the presence of any formal features on X beyond [nom].



As another qualification we want to stress that structural Case licensing is in our and many others' view separated from Theta role assignment and while our data sheds light on the Case hierarchy, it provides only a partial argument with respect to the latter hierarchy (given that UTAH holds, cf. Baker 1988). We note in passing that the data from Czech retroactive infinitives is compatible with the three Case-Theta hierarchies shown in (16) and that some arguments of Bailyn (1995), repeated in Bailyn (2010), in particular, the possibility of licensing instrumental secondary predicates in Russian, might be revealing about the Theta hierarchy but say nothing about the Case hierarchy (see also chapter 2 of Pylkkänen 2008). In (16), Ag stands for (some head responsible for licensing) the Agent role, Th for (some head responsible for licensing) the Theme role, and B/R for (some head responsible for licensing) the Benefactive/Recipient role.<sup>8</sup>

- (16) a. Nom < Ag < Dat < B/R < Acc < Th  
 b. Nom < Ag < Dat < Acc < B/R < Th  
 c. Nom < Ag < Dat < Acc < Th < B/R

### 3.2 Structural deficiency

Czech retroactive infinitives make use of a general rule which governs structural deficiency, so called peeling (Evers 1975; Rizzi 1994; Cardinaletti & Starke 1999; Wurmbrand 2001). Informally said, the rule makes it possible to remove a functional structure from the top – to “peel” it like a potato. The idea can be informally presented on one abstract, but simple, example. Suppose that a functional sequence, which is the extended projection of the lexical category of verbs, includes three phrases: CP, TP and vP. Furthermore, CP dominates TP, which in turn dominates vP. Peeling states that a verb cannot project higher phrases while skipping lower ones. For example, the extended projection consisting of TP and vP (without CP) is possible but the extended projection consisting of CP and vP (without TP) is not.

Based on our data from Czech retroactive infinitives, we speculate that this general rule of structural deficiency is applied in the absence of any morphological cues to achieve the effect of a passive. On the other hand, particular morphosyntactic marking (passive auxiliaries and affixes) can signal that the structure was removed “selectively”, ignoring the functional sequence. Hence, the following two generalizations hold:

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8 Notice that (16) contains no instance of Acc/Dat < Ag. This entails that the licensing of Accusative/Dative happens before (lower in the structure than) the licensing/introduction of Agents.

- (17) a. Infinitival passives (no morphological marking) → peeling applies.  
 b. Canonical passives (passive morphosyntax) → “selective removal” of Acc(P).

It follows from (17b) that structural Dative, which is promoted in infinitival passives, see (18a) (repeated from (5a)), does not get promoted to Nominative in canonical passives, compare (18b) and (18c).

- (18) a. Marie      potřebuje      pomoct.  
 Marie.nom    needs            help.inf  
 ‘Marie needs help.’
- b. \*Marie      byla            pomožena.  
 Marie.nom    was.sg.fem    help.pass.sg.fem  
 Intended: ‘Marie was helped.’
- c. Marii      bylo            pomoženo.  
 Marie.dat    was.sg.neut    help.pass.sg.neut  
 ‘Marie was helped.’ (lit. ‘It was helped to Marie’)

However, other morphosyntactic markings might signal “selective removal” of structural Datives. One possible candidate signaling such removal is the *get*-passive, already illustrated above in (7b). Another possible candidate is a passive participle appearing with the auxiliary *have*, which was discussed in Caha (2009), among others. An example of such a *have*-passive is in (19b). Notice that the Dative argument *Honzovi* in the active sentence (19a) is promoted to Nominative in the passive sentence in (19b). It should be noted, however, that we consider this evidence only suggestive and we believe that further research is needed to establish the grammatical status of both the *have*-passive and the *get*-passive in Czech.

- (19) a. Marie      slíbila      Honzovi      zmrzlinu.  
 Marie.nom    promised    Honza.dat    ice-cream.acc  
 ‘Marie promised Honza an ice cream.’
- b. Honza      měl od      Marie      slíbenu            zmrzlinu.  
 Honza.nom    had from    Marie      promise.pass.acc    ice-cream.acc  
 ‘Honza had an ice cream promised from Marie.’

This concludes the discussion of our assumptions. The next section shows how the assumptions coupled with independent properties of Czech derive the behavior of Czech retroactive infinitives.

## 4 Retroactive infinitives as structurally deficient clauses

What defines Czech retroactive infinitives is their lack of the external argument and lack of the highest head assigning Case to an object, in particular either Dat or Acc. Given our assumptions about structural deficiency and Case, this means that any parts of the functional sequence dominating Dat or Acc cannot project either. More concretely, this means that CP, TP and vP must be missing as well. In other words, retroactive infinitives are restructuring in the sense of Wurmbrand (2001). Furthermore, given our assumptions about Case, we expect that structural Accusative survives the peeling of structural Dative but not vice versa. We now turn to these predictions.

### 4.1 Missing CP, TP and vP

We present a number of arguments supporting our hypothesis that retroactive infinitives are structurally rather small. The evidence comes from clitic climbing, adverbial modification, and the (un)availability of a reflexive construal of the retroactive infinitive.

It has been argued that clitics in Czech attach somewhere between the TP and CP domain, possibly at FinP (Toman 1999; Lenertová 2004). If retroactive infinitives are VPs (and not bigger), this means that clitics will have to climb out to the matrix clause, as there will be no landing site for the clitic in the RI. As (20) shows, this prediction is borne out (note that all versions of (20) are grammatical under the ordinary control reading). Notice also that in its control reading the complement of *potřebovat* ‘need’ does not require clitic climbing, (21). This shows that obligatory clitic climbing is not a lexical property of the verb ‘need’, rather, it is coupled with retroactive infinitives.

(20) Marie {ho} potřebuje {\*ho} rychle {\*ho} ukázat.  
 Marie.nom him needs him quickly him show.inf  
 ‘Marie needs showing it/him quickly.’

(21) Marie<sub>i</sub> {ho} potřebuje rychle {ho} PRO<sub>i</sub> ukázat Karlovi.  
 Marie.nom him needs quickly him show.inf Karel.dat  
 ‘Marie needs to show it/him to Karel quickly.’

Given that retroactive infinitives lack TPs, we expect them not to be able to bear their own temporal specification. The data in (22) is quite difficult to judge, but the judgment goes in the expected direction.

(22) Ještě před týdnem potřebovala Marie (??zítra) ostříhat vlasy.  
 still before week needed Marie.nom tomorrow cut.inf hair  
 Intended: ‘Only a week ago Marie needed to get her hair cut (tomorrow).’

Finally, if we follow the common assumption that little *v* is responsible for introducing agentive/causative semantics, we expect agentive adverbs to be ruled out with RIs. This is borne out, (23a). Notice that the degraded status of the adverb is not due to the semantic incompatibility of such adverbs with the passive voice since the same adverb can appear in canonical passives, (23b).

- (23) a. Ta skladba potřebuje zahrát (??záměrně) velmi pomalu.  
 that song.nom needs play.inf intentionally very slowly  
 Intended: ‘It is desirable to play this song (intentionally) very slowly.’
- b. Ta kniha byla čtena (záměrně) velmi pomalu.  
 that book.nom was read.pass intentionally very slowly  
 ‘The book was read (intentionally) very slowly.’

Another argument for a missing little *v* comes from the fact that RIs, as opposed to canonical passives, can be interpreted reflexively, compare (24a) with (24b). This would follow if ordinary passives introduce a free variable which absorbs the Agent role and which behaves as a pronoun (as opposed to a reflexive anaphor) syntactically—in that case, the ban on the reflexive reading of (24b) falls out as a violation of Principle B. Since retroactive infinitives lack the Agent-introducing structure, no such pronoun is generated in the syntax and the resolution of the Agent reference is left to pragmatics, effectively allowing for a reflexive interpretation. Analogous diagnostics for the syntactic presence or absence of Agents was used by Kratzer (2000), among others (see e.g. Baker, Johnson & Roberts 1989 for a detailed discussion of a comparable phenomenon in English).

- (24) a. Karel potřebuje učesat.  
 Karel.nom needs comb.inf  
 ‘Karel’s hair needs combing (possibly performed by Karel).’
- b. Karel byl učesán.  
 Karel.nom was comb.pass  
 ‘Karel’s hair was combed (necessarily by somebody else than Karel).’

One potential glitch of our analysis that readers might have noticed is the status of *by*-phrases. As we observed above (see (6)) and as illustrated below in (25), it is possible to modify the retroactive infinitive by an agentive *by*-phrase.

- (25) a. Ten jev potřebuje prozkoumat špičkovými vědci.  
 that phenomenon.nom needs investigate.inf top scientists.instr  
 ‘The phenomenon needs to be investigated by top scientists.’

- b. Marie      potřebuje   poradit   od   zkušeného   psychologa.  
 Marie.nom   needs           advise.inf   from   experienced   psychologist.gen  
 ‘Marie needs advice from an experienced psychologist.’

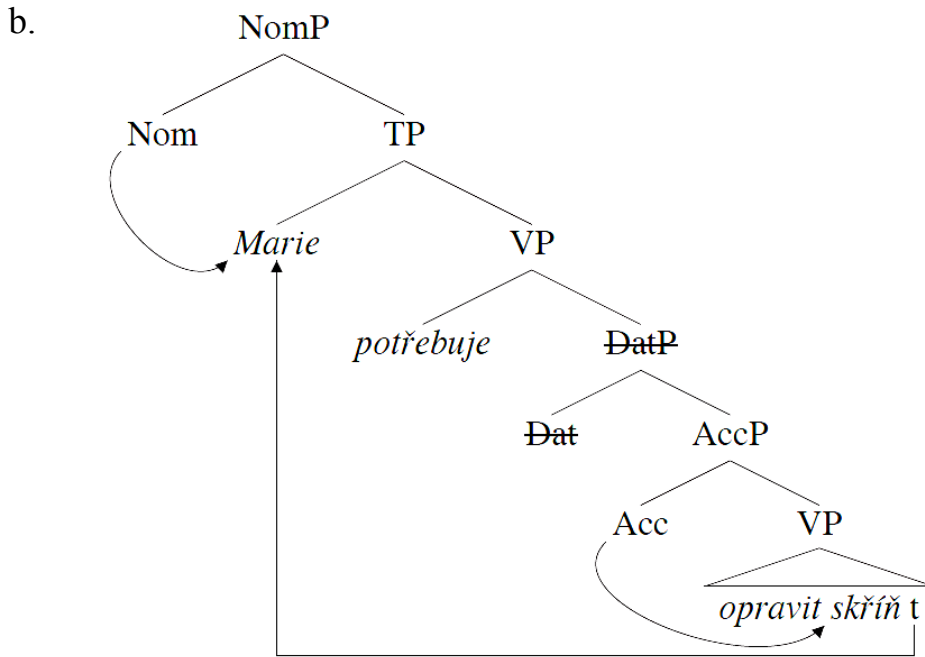
Isn't such modification predicted to be impossible, given the absence of little *v*? This is part of a larger issue, namely, how to deal with cases in which one piece of evidence (that of adverbs) point to the complete absence of a thematic role while another one (that of *by*-phrase) shows that the thematic role seems to be present. The same issue arises in the domain of *get*-passives, see Alexiadou (2005). Most analyses of *by*-phrases are restricted to periphrastic passives and they cannot be extended to our data, or, for that matter, to *get*-passives without extra stipulations. Keenan (1980) and recently, Bruening (to appear) proposed a more general analysis of *by*-phrases but even those couple the phrase with the (implicit) presence of the external argument. We hypothesize that the *by*-phrase in retroactive infinitives is introduced lower in the structure, bears the Source rather than Agent Theta role, and hence remains unaffected by peeling.

#### 4.2 Dative and Accusative Case

While the previous section presented the data that follow from our assumption on structural deficiency in retroactive infinitives, this subsection focuses on the Case hierarchy. We are going to present evidence showing that structural Dative must be licensed higher than Accusative.

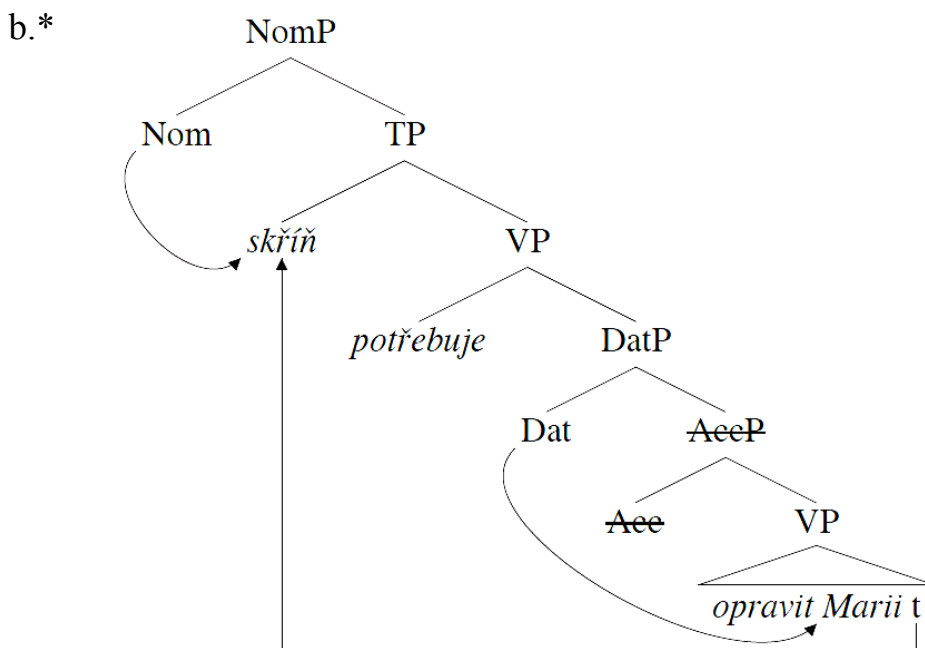
We have already mentioned that both Dative and Accusative arguments can raise in retroactive infinitives, see examples (1)–(3). If both arguments are introduced in the infinitival clause, the Dative argument can raise to the subject position. In the example below, *opravit* ‘repair’ has two internal arguments, a Benefactive and a Theme, canonically realized as Dative and Accusative arguments, respectively. The Benefactive can be realized as the matrix subject, i.e., we see that it could raise from the infinitival clause to the matrix clause. Given our analysis, this shows that the head assigning Dative can be peeled from the retroactive infinitive without affecting the head assigning Accusative.

- (26) a. Marie      potřebuje   rychle   opravit   tu   skříň.  
 Marie.nom   needs           quickly   repair.inf   that   closet.acc  
 ‘Marie needs to get her closet repaired quickly.’



The reverse pattern is not possible. As (27) shows, the Theme cannot be realized as the matrix subject. Notice also that there is nothing wrong with passivizing a Theme in principle. As has already been demonstrated, if a verb assigns no Dative argument, the Theme that would normally bear Accusative becomes the matrix subject. Even more to the point, if the dative argument of *opravit* ‘repair’ is not realized, the Theme can be promoted. This is shown in (28).

- (27) a. \**Ta skříň potřebuje rychle Marii opravit.*  
 that closet.nom needs quickly Marie.dat repair.inf  
 Intended: ‘It is necessary to repair the closet for Mary quickly.’



- (28) Ta skříň potřebuje rychle opravit.  
 that closet.nom needs quickly repair.inf  
 ‘It is necessary to repair the closet quickly.’

The final support for our analysis, in which the head assigning Dative is higher than the head assigning Accusative, comes from the distinction between structural and lexical Dative arguments. The existence of two Datives has been extensively discussed in the literature on German (Fanselow 1987; Wegener 1991; Abraham 1995; McFadden 2004), and it has been noted that while the Recipient/Benefactive role receives structural Dative, other roles, such as Goal, receive lexical Dative. This conclusion was based, among other things, on the fact that Recipients/Benefactives can be passivized in *get*-passives while Goals and other lexical Datives cannot. This is illustrated by the contrast below (taken from Wegener 1991), where *der Junge* ‘the boy’ in (29a) bears Nominative (rather than Dative) as a result of *get*-passivization, while an analogously derived Nominative on *die Kälte* ‘the cold’ in (29c) is ungrammatical. Active versions of the sentences are provided for illustration in (29b) and (29d), respectively.

- (29) a. Der Junge bekam eine Lederhose geschenkt.  
 the.nom boy got a.acc leather.pants give(as.gift).pass  
 ‘The boy got leather pants (as a gift).’
- b. Jemand hat dem Jungen eine Lederhose geschenkt.  
 somebody has the.dat boy a.acc leather.pants give(as.gift).past  
 ‘Somebody gave leather pants to the boy (as a gift).’
- c. \*Die Kälte bekommt das Kind ausgesetzt.  
 the.nom cold gets the.acc child expose.pass  
 Intended: ‘The cold (weather) has the child exposed to it.’
- d. Jemand hat das Kind der Kälte ausgesetzt.  
 somebody has the.acc child the.dat cold expose.past  
 ‘Somebody exposed the child to the cold (weather).’

The same division of Dative-marked arguments was recently proposed in Dvořák (2010) for Czech. Below, we present a few verbs that differ with respect to the assignment of lexical/structural Datives.

- (30) a. Verbs assigning structural Dative: *dát* ‘give’, *poslat* ‘send’, *vrátit* ‘return’, *přidělit* ‘allot’, etc.
- b. Verbs assigning lexical Dative: *vystavit* ‘expose (to)’, *podřídít* ‘subordinate (to)’, *zasvětit* ‘devote (to)’, *přizpůsobit* ‘adjust’, etc.

Our analysis makes straightforward predictions regarding lexical Datives. First, they cannot be promoted to the subject in retroactive infinitives. This is indeed impossible, witness the ungrammatical status of (31). *Přizpůsobit* ‘adjust’ has been argued to be a verb assigning lexical Dative, along with an Accusative argument, realized as *plán* ‘plan’ in the example below. The Dative argument cannot be promoted to the matrix subject, which contrasts with the behavior of Dative arguments in (26) and other examples above.

- (31) \*Požadavky           potřebují   přizpůsobit   plán.  
           requirements.nom   need           adjust.inf     plan.acc  
           Intended: ‘The requirements need a plan-adjustment.’

Second, lexical Datives should not block the passivization of Accusative because no functional head in the Case hierarchy assigns this Case, rather, they receive their Case in the local relation with the verb, along with their thematic role. Thus, peeling off the Accusative head does not affect lexical Datives in any way. The example in (32) provides the crucial evidence. We use the same verb as in the example before. The Dative argument *požadavkům* ‘requirements.dat’ is realized in the infinitival clause and does not block the promotion of the Theme argument to the subject. (The noun *situace* ‘situation’ is used because its form is unambiguously nominative, whereas *plán* ‘plan’ is syncretic between nominative and accusative.)

- (32) Situace           potřebuje   přizpůsobit   požadavkům.  
           situation.nom   needs           adjust.inf     requirements.dat  
           ‘The situation needs to be adjusted to the requirements.’

We have noticed above that Bailyn (2010), among others, argues that Accusative should be assigned higher than Dative. It is worth noting that what we consider the strongest argument for his position, namely the binding of reciprocals, is based on two Russian verbs, *predstavit* ‘introduce’ and *prednaznačit* ‘predestine’. At least the first verb has lexical Dative, as we can show on Czech retroactive infinitives: the Accusative argument can become the subject even in the presence of the Dative, (33a), while the reverse is not possible, (33b). Notice that the latter example is not ungrammatical but it gets the irrelevant interpretation in which the matrix subject controls the PRO in the infinitive. In other words, (33b) is not a retroactive infinitive.



- (33) a. Lukáš           potřebuje   představit   řediteli.  
 Lukáš.nom   needs           introduce.inf   director.dat  
 ‘Lukáš needs to be introduced to the director.’
- b. Lukáš           potřebuje   představit   ředitele.  
 Lukáš.nom   needs           introduce.inf   director.acc  
 ‘Lukáš needs to introduce the director (to someone).’

## 5 Conclusion

We have offered an analysis of retroactive infinitives in Czech within the framework of generative grammar. The analysis requires a few crucial ingredients. First, we argued that retroactive infinitives are passive, i.e., their verbal projections lack the external argument and the capacity to assign a structural Case to an object. Second, we argued that retroactive infinitives are restructuring in Wurmbrand’s sense, i.e., not bigger than VP. We showed that this conclusion follows from their passive nature and from the assumption that their structural deficiency is derived by peeling. Finally, we showed that retroactive infinitives give us evidence that structural Datives are licensed higher than Accusatives and that one needs to make the distinction between lexical and structural Datives.

There are various questions that remain open. Probably the most obvious one concerns cross-linguistic variation. Why do we see retroactive infinitives in Czech but the same structure is missing, as far as we know, from other Slavic languages? Another point is the exact opposite, i.e., a cross-linguistic similarity. We have noted that Czech retroactive infinitives share many characteristics with retroactive gerunds/nominals in English and other languages. What is the reason that verbs like *need* and *deserve* cross-linguistically seem to trigger similar properties in their complements, be these nominals or infinitives? These issues are intriguing and suggest that even seventy years after Jespersen’s English grammar was published, we did not learn everything there is to know about retroactive infinitives.

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